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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/026,221

12/19/2001

Werner Knebel

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06/03/2004

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EXAMINER

GAGLIARDI, ALBERT J

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,221

Applicant(s)

KNEBEL, WERNER

Examiner

Albert J. Gagliardi

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1,2,5-8 and 10 is/are allowed.
6) ☒ Claim(s) 3,4,9 and 11-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/01.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) and 1.84(o). The blocks in Figure 1 are required to be labeled with descriptive legends.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 4, 9, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 3, 4, 9 and 11, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 3, 4, 9 and 11 each

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of the claims recite a broad recitation and the claims also recite a “particular” limitation which is the narrower statement of the range/limitation.

Regarding claim 12, the claim recites a limitation relating to “the stimulation specific stains” in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuste *et al.* (US 6,662,039 B2) in view of Tsien (US 5,296,703).

Regarding claim 12, as best understood, Yuste discloses an apparatus for locating specimens of interest in a stimutable microscopic specimen comprising: a means for illuminating at least a portion of the specimen with at least one illuminating light beam (inherent antecedent means in view of optical detection of an image of a fluorescent indicator (col. 3, lines 61-63) and the disclosed use of a convention or two photon microscope (col. 11, lines 49-52) (see also Tsien (Fig. 1) disclosing an illumination source ((1) as an element of a well known type of conventional fluorescent microscope); a means for initiating a stimulation ((col. 6, lines 63-65); a means for detecting light from a stimulation-specific stain (col. 3, lines 61-73); and means for identifying the spatial position of the regions within the specimen from which light that is an emission wavelength of the stimulation-specific stain is emerging (inherent aspect of producing an image (col. 4, lines 2-4) with a camera (col. 7, lines 23-25).

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Regarding the regions emitting at least two wavelengths, *Yuste* discloses that the stimulation specific stain may be a Fura-2 stain (col. 7, lines 13-16). Those skilled in the art appreciate that Fura-2 is a ratiometric stain that emits with two distinct wavelengths (see for example *Tsien* (col. 1, lines 35-39) and that such conventional fluorescent microscopes are arranged so as to detect both wavelengths (inherent aspect of forming a ratio between the intensities of the two wavelength peaks (col. 1, lines 52-59).

Therefore it would have been an obvious (if not inherent) to modify the device suggested by *Yuste* such that two wavelengths are detected, as suggested by *Tsien* so as to allow for accurate and reliable measurement.

Regarding the use of two stimulation-specific stains, the examiner notes that:

Apparatus claims must be structurally distinguishable from the prior art. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). See MPEP 2114.

And also:

The inclusion of a material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25USPQ 69 (CCPA 1935). See also MPEP 2115.

In this case, the recitation of the plural “stains” as opposed to the prior art use of a single stain emitting in two wavelengths does not distinguish the claimed apparatus from the prior art in terms of structure.

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Regarding claim 13, *Yuste* discloses a processing unit that creates a temporal correlation between signals furnished by the means for detection and the initiation of the stimulation (see generally col. 7, line 26 to col. 8, lines 30).

Regarding claim 14, although the conventional type of fluorescent microscope disclosed by *Tsien* uses multiple detectors, conventional fluorescent microscopes utilizing a single multi-band detector instead of multiple detectors are well known in the art and considered as functionally equivalent. As such, absent some degree of criticality, the use of a single multi-band detector would have been a matter of routine design choice within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

Regarding claim 15, *Yuste* discloses means for applying an electrical voltage (current) (col. 7, lines 17-22).

Regarding claims 16 and 17, *Tsien* discloses that conventional fluorescent microscopes may include a beam deflection device (9, 10) for guiding the illumination beam over a defined path and a position sensor (46) for ascertaining the position of the beam deflection device, wherein the deflection device includes tiltable mirrors (9, 10) and galvanometers (col. 4, lines 46 and 59) for bringing about the tilting of the mirrors.

Allowable Subject Matter

6. Claims 1-2, 5-8 and 10 are allowed.

Claims 3, 4, 9 and 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

7. The following is a statement of reasons for the indication of allowable subject matter:

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Regarding independent claim 1, the prior art does not disclose or fairly suggest a method for locating specimen regions of interest in a stimulatable microscopic specimen, as specifically claimed, including at least the step of introducing into the specimen at least two stimulation specific stains that emit light of different wavelengths. The examiner notes that while art (*Yuste*, for example) discloses a method wherein one of several different stimulation specific stains may be introduced into the specimen, the prior art does not suggest introducing two stains. The examiner further notes that while one skilled in the art could easily modify the prior art so as to include a step of introducing two stimulation specific stains, there is no motivation, absent hindsight reasoning, for doing so.

Conclusion

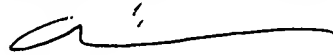
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2878

AJG